

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

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Public Health Statement for Lithium

Lithium is a metal that naturally occurs in rocks and soils and can sometimes be found in drinking water, mainly from the weathering of lithium-containing minerals in older bedrock or where groundwater interacts with saline water. Lithium in drinking water may also come from man-made sources related to the use of lithium and lithium salts in a wide variety of commercial products (including batteries, ceramics, glass, lithium-containing pesticides), industrial processes (including use as flux for welding and soldering, additive in aluminum electrolysis and concrete treatment), and as an oral medication for treating mental health conditions.

Most people are exposed to some level of lithium through their diet (primarily grains and vegetables) and drinking water. Daily intake from plant-derived foods and drinking water varies substantially worldwide. In adults in the US, daily intake ranges from 650 to 3,100 micrograms.

Our understanding of the potential health effects of lithium comes from its use over the past 75 years as the gold standard treatment for bipolar disorder, making lithium one of the most well-studied medications to date. Some people treated with lithium medication may experience gastrointestinal effects (nausea, diarrhea, and vomiting) and neurological effects (tremor). Long-term treatment using lithium may affect the thyroid, kidneys and heart function. Use during pregnancy is associated with increased risk of certain birth defects. Less is known about potential health effects from exposure to lithium in drinking water, where average daily intake levels are hundreds to thousands of times lower than that from medication.

Individuals taking lithium therapeutically should discuss the levels of lithium in their drinking water with their physician.

Currently, lithium is not regulated in drinking water in the U.S. The CT Department of Public Health (CTDPH) has identified a health-based drinking water value for lithium of 40 µg/L or parts-per-billion (ppb). This is the health-based comparison value used by the Agency for Toxic Substances and Disease Registry. ATSDR recommends that exposure to lithium be reduced when lithium levels in drinking water exceed 40 µg/L. CTDPH toxicologists will continue to evaluate the ATSDR value as additional scientific research on lithium is published in the peer-reviewed literature.

For more information, please contact Cheryl Fields at Cheryl.fields@ct.gov.



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